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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/634,840	08/06/2003	Yoshiaki Sakamoto	020755A	8607
23850	7590	02/24/2005	EXAMINER	
ARMSTRONG, KRATZ, QUINTOS, HANSON & BROOKS, LLP 1725 K STREET, NW SUITE 1000 WASHINGTON, DC 20006			NGUYEN, TAI V	
			ART UNIT	PAPER NUMBER
			3729	

DATE MAILED: 02/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/634,840

Applicant(s)

SAKAMOTO ET AL.

Examiner

Tai Van Nguyen

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– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 06 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-3 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☒ Certified copies of the priority documents have been received in Application No. 10/163,617.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 8/6/03.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Specification***

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.
2. The following title is suggested: A METHOD OF MANUFACTURING AN INK JET HEAD HAVING A PLURALITY NOZZLES.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Thiel (US5,752,303).

As applied to claim 1, Thiel discloses a method of manufacturing an ink jet head having a plurality of nozzles for discharging ink supplied from an ink supply part characterized in that comprising: a step of forming, on a substrate (layers 3-7) a head main body (layer 2) including a plurality of pressure chambers (104, 151) provided one for each of the nozzles (112) and filled up with ink, a plurality of pressurizing provided one for each of the pressure chamber with chambers for pressurizing the pressure chamber to discharge the ink in the pressure chamber from the nozzle and a common ink (111) passage for supplying the ink from the ink supply part to the plurality of pressure chamber; a step of removing the substrate partially from the head main body to form (see column 8, lines 52-55), in the substrate, a communicating passage (110)

for making a communication between the common ink passage and an ink supply port (111) of the ink supply part and of forming a residual portion of the substrate on the head main body as a joint portion for joining the ink supply part to the head main body (see sequence Fig. 3a-3e).

4. Claim 2 is reject under 35 U.S.C. 103(a) as being unpatentable over Thiel in view of Kanno et al (US 6,347,862).

Regarding to claim 2, Thiel discloses substantially all of the limitations of the claimed invention except the step the substrate is made of magnesium oxide.

Kanno et al teach the substrate is made of magnesium oxide (see column 20, lines 1-14). It would have been to one ordinary skill in the art at this time the invention was made to have modified Thiel by forming the substrate of magnesium oxide, as taught by Kanno et al, to positively provide a substrate of good quality that is small in size and light weight (see column 2, lines 40-42).

5. Claim 3 is reject under 35 U.S.C. 103(a) as being unpatentable over Thiel in view of Ageishi (US 4,733,447).

Regarding to claim3, Thiel discloses substantially all of the limitations of the claimed invention including partial removal of the substrate by etching (see column 8, lines 52+). However, Thiel does not teach a photoetching treatment.

Ageishi teaches that a substrate can be partially removed by means of a photoetching treatment (see column 5, lines 4-6). It would have been to one ordinary skill in the art at this time the invention was made to have modified Thiel by providing partial removal through a photoetching treatment, as taught by Ageishi, to positively

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provide a highly accurate and highly reliable substrate in an jet printer (see column 1, lines 41-44).

***Conclusion***


6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tai Van Nguyen whose telephone number is 571-272-4567. The examiner can normally be reached on M-F (7:30 A.M - 4:30 P.M).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Vo can be reached on 571-272-4690. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TN.  
February 18, 2005



**A. DEXTER TUGBANG**  
**PRIMARY EXAMINER**